

Real Estate Appendix

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# General Reevaluation Report



**US Army Corps  
of Engineers** ®  
Sacramento District



**Real Estate  
Plan**

December 2015

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**Real Estate Plan  
For  
West Sacramento General Revaluation Report Draft Study  
Yolo County, California**

**1. Statement of Purpose**

This Real Estate Plan (REP) is intended to support and present the real estate requirements for the West Sacramento Project General Revaluation Report (West Sacramento GRR) located in the eastern Yolo County in the north central region of California's Central Valley. The West Sacramento Project is one of several flood risk management projects authorized within the greater Sacramento River Watershed. It is part of an overall system in place in the Sacramento Valley since the early 1900's known as the Sacramento River Flood Control Project. The initial study for the West Sacramento Project is as follows:

Sacramento River Flood Control System Evaluation Authorization

The conference report accompanying the Energy and Water Development Appropriation Act of 1987 (Public Law 99-591) included \$600,000 in funds over the President's Budget under Operations and Maintenance, General Appropriation, Inspection of Completed Works. Similar language is contained in both the House of Representatives and Senate Version of the Report.

The House of Representative's Report 99-70, states:

*Inspection of Completed works: Sacramento River Flood Control Project, California.* – The committee has included \$600,000 for a comprehensive analysis of the long term integrity of the flood control system for the Sacramento River and its tributaries in collaboration with the State of California. The committee is aware that even before the recent flooding, regional flood control officials felt the need for a thorough survey of the system. While it did serve well in the floods and prevented billions of dollars in damages, under stress it validated concerns that in many places remedial work is necessary as soon as possible, as may be enhanced levels of protection. The Corps is directed to report back to the committee on protection enhancement requirements which it encounters in the review of the project.

The Senate Report, 99-441, states:

*Inspection of Completed Works, Sacramento River Flood Control Project, CA.* – The Committee is aware of the need for a comprehensive analysis of the integrity of the flood control system for the Sacramento River and its tributaries. Given the importance of this flood protection system, the committee believes that such an analysis is warranted.

In the wake of a 1997 flood, the Corps identified underseepage as an area of greater concern in the design and repair of levees. This resulted in a number of design revisions to the levee repairs in the West Sacramento Project. These design revisions and the associated increase to the total project cost was captured in a supplemental authorization through the Energy and Water Development Appropriation Act of 1999.

The current study area is located in the City of West Sacramento, California comprising the lands within the West Sacramento Area Flood Control Agency's boundaries, which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The primary objective of the West Sacramento GRR is to determine the extent of Federal interest in reducing the flood risk within the study area in bringing 50 miles of perimeter levees surrounding West Sacramento into compliance with applicable Federal and State standards for levees protecting urban areas. Proposed levee improvements would address levee height deficiencies, levee seepage, erosion, and stability conditions along the West Sacramento Levee area. This REP focuses on the lands, easements, right-of way descriptions and real estate costs for the final construction alternative - the Recommended Plan which is Alternative 5, proposed for Congressional re-authorization due to increased costs. There may be modifications to the project and its plans that occur during the Preconstruction, Engineering and Design (PED) phase, thus changing the final acquisition area(s) and/or administrative and land costs reflected in this REP.

The West Sacramento GRR's Recommended Plan costs, the original authorized project costs from the Feasibility Report completed in 1992, the project costs last presented to Congress in June 2009, and the current Project Cost Estimate from June 2011 are shown in Table 1.

**TABLE 1: Project First Cost (Displayed in Thousands)**

Construction Item	GRR Recommended Plan	Project as Authorized <sup>1</sup>	Project as Last Presented to Congress <sup>2</sup>	Current Project Cost Estimate <sup>3</sup>
Lands and Damages	286,462	1,880	2,388	2,387
Relocations	21,808	15	128	128
Fish & Wildlife Facilities	18,105	2,400	3,201	3,044
Levees & Floodwalls	1,034,413	10,200	35,370	28,394
Pumping Plants	0	0	0	0
Cultural Resources Preservation	8006	131	0	0
Subtotal	1,360,788	14,626	41,087	33,913
Planning Engineering & Design (PED)	152,655	1,665	9,526	10,690
Construction Management	91,318	1,132	2,007	2,034
Total First Cost	1,612,767	17,423	52,620	46,677
Associated Costs	0	0		0
Total Costs	1,769,767	17,423	52,060	46,677

<sup>1</sup> Project Cost from Sacramento Metropolitan Area, California Feasibility Report, February 1992

<sup>2</sup> Project Cost based on Project Cost Estimate from June 2009.

<sup>3</sup> Project Cost based on Project Cost Estimate from June 2011

## **2. Project Authority**

The report for which this REP Appendix has been prepared is a general reevaluation study of the West Sacramento area. Study authorization of this project was provided in Section 209 of the Flood Control Act of 1962, Pub. L. No. 87-874, § 209, 76 Stat. 1173, 1197 (1962). Construction authority and authority to produce a General Reevaluation Report was provided in Section 101(4) of the Water Resources Development Act (WRDA) of 1992, Pub. L. No. 102-580, § 101(4), 106 Stat. 4797, 4801-4802 (1992) (hereinafter WRDA 1992), and revised and supplemented through the Energy and Water Development and Appropriations Act (EWDAA) of 1999, Pub. L. No. 105-245, 112 Stat. 1838, 1840-1841 (1999) (hereinafter EWDAA 1999).

## **3. Project Description**

The project purpose and objective is to provide flood damage reduction to the City of West Sacramento, Yolo County, California. Providing flood damage reduction would reduce loss of life and damage to property in the project area. The objectives being addressed by the project are to reduce flood stages, address through seepage and underseepage of levees, address inadequate levee heights, address erosion, address slope stability, address vegetation issues, increase protection levels of existing levees, and to address operations, maintenance and emergency response access. The location of the study area for the West Sacramento GRR consists of an area that includes almost all of the City of West Sacramento. The study has been divided into two areas, the Northern and Southern Sub-Basins. The Sacramento River Deep Water Ship Channel and Barge Canal divide the northern Sub-Basins from the southern Sub-Basin at the Southport area. The project map is shown in Figure 1.

The project alternatives consist of components and cost estimates of the various reaches which will be described in further detail below.

**Northern Sub-basin** – The northern sub-basin, representing approximately 6,100 acres, is bounded by the Port North area and the Deep Water Ship Channel (DWSC) to the south, the Sacramento River North Levee to the north and east, the Sacramento Bypass Levee to the north, and the Yolo Bypass Levee to the west. Land in this area varies in elevation from El. 34.0 feet near Raley Field to El. 16.0 to 18.0 feet adjacent to the DWSC. The north bank of the DWSC is generally about El. 19.5 feet. The right bank (looking downstream) of the Sacramento River extends for approximately 5.5 miles of the northern and eastern sides of the basin. The northern reach descriptions are listed below.

### **Sacramento River North Levee**

This reach extends along the right bank of the Sacramento River from its confluence with the Sacramento Bypass downstream approximately 5.5 miles to the entrance of the barge canal. These measures would be: (1) installation of cutoff wall to address seepage and slope stability concerns; and (2) bank protection measures to address erosion concerns.

**Yolo Bypass Training Levee**

This reach extends for approximately 1.1 miles along the Sacramento Bypass left bank levee from the Sacramento Weir west to the Yolo Bypass Levee. Bank protection is proposed for 3,000 feet to address erosion issues.

**Yolo Bypass Levee**

This reach extends in a southerly direction along the left bank of the Yolo Bypass approximately 3.8 miles from its intersection with the left bank levee of the Sacramento Bypass to its intersection with the DWSC West Levee. The measure that would be implemented for the Yolo Bypass levee would be: (1) installation of a cutoff wall to address seepage and slope stability concerns.

**Southern Sub-Basin**

The Southern Sub-Basin encompasses approximately 6,900 acres and varies from El. 18.0 feet to El. 8.0 feet. The area is bounded by the Port South Levee and the DWSC to the north, the Sacramento River South Levee to the east, the South Cross Levee to the south, and the DWSC East Levee to the west. The south bank of the DWSC from Lake Washington to the Sacramento River is generally at El. 19.5 feet. The right bank of the Sacramento River extends for approximately 6.2 miles on the east side of the basin. The southern reach descriptions are listed below.

**Port South Levee**

This reach encompasses the combination of levees and high ground that exists along the left bank of the barge canal and DWSC from the Sacramento River westward until it meets the DWSC East Levee on the left bank of the DWSC. The measures to address the levee would be: (1) installation of convention open trench clay cap cutoff wall and slurry wall to address seepage concerns.

**South Cross Levee**

This reach extends for approximately 1.2 miles from the intersection of Jefferson Boulevard and the levee along the left bank of the DWSC to the Sacramento River where it intersects the southern limit of Sacramento River South Levee reach. This levee is the southernmost boundary of the city. The South Cross levee remediation measures would address seepage, slope stability, and erosion concerns. Measures implemented for the South Cross Levee would be: (1) installation of relief wells to address seepage concerns; and (2) a stability berm to address levee stability concerns.

**Deep Water Ship Channel Closure Structure**

This feature proposes to construct a flood barrier structure within the Sacramento Deep Water Ship Channel (DWSC) and gated overflow weir structure that would prevent flood flows from proceeding north in the ship channel. The gated weir would be constructed along the DWSC West navigation levee and would divert flood flows from the Yolo Bypass into the DWSC. The closure structure would be operated to prevent flood flows from proceeding north and potentially flood the Port of West Sacramento or the City of West Sacramento. While this alternative may provide some degree of flood protection for the city, it would not meet the objective of providing a 200-year level of flood protection because portions of the city would remain susceptible to flooding. In addition, operation of the closure structure and the weir may require reoperation of flood control system components (e.g., the Yolo Bypass or upstream reservoirs). This feature only applies to Alternative 3. It is not a feature in Alternatives 1 and 5, and as such is not a part of the Recommended Plan.

**Deep Water Ship Channel East Levee**

This reach extends along the left bank of the DWSC channel for approximately 2.8 miles in a southerly direction from the high ground making up the western limit of the Port South Levee reach 13 to the intersection of Jefferson Boulevard with the South Cross Levee. The measures implemented for the DWSC east levee would be: (1) installation of slurry walls to address seepage and stability concerns; (2) bank protection to address erosion concerns.

**Deep Water Ship Channel West Levee**

This reach extends along the left bank of the Yolo Bypass and the right bank of the DWSC approximately 22 miles in a southerly direction from its intersection with the western limit of the Port North Levee to Miners Slough. The measures for the west levee would be: (1) installation of cutoff walls to address seepage and slope stability concerns; and (2) bank protection to address erosion.

**Sacramento River South Setback Levee**

This reach extends along the right bank of the Sacramento River from the entrance of the barge canal downstream approximately 6.4 miles to the South Cross Levee. The measures that would be implemented would be: (1) construction of a setback levee, adjacent levee, seepage berm, and fix in place to address seepage, slope stability, and erosion concerns; (2) installation of cutoff walls, sheet pile walls, jet grouting, and relief wells to address seepage and slope stability concerns; and (3) limited bank protection measures to address erosion concerns on the existing levee and bank protection on the setback levee.

The final array of alternatives considered prior to identification of the Recommended Plan are listed below:

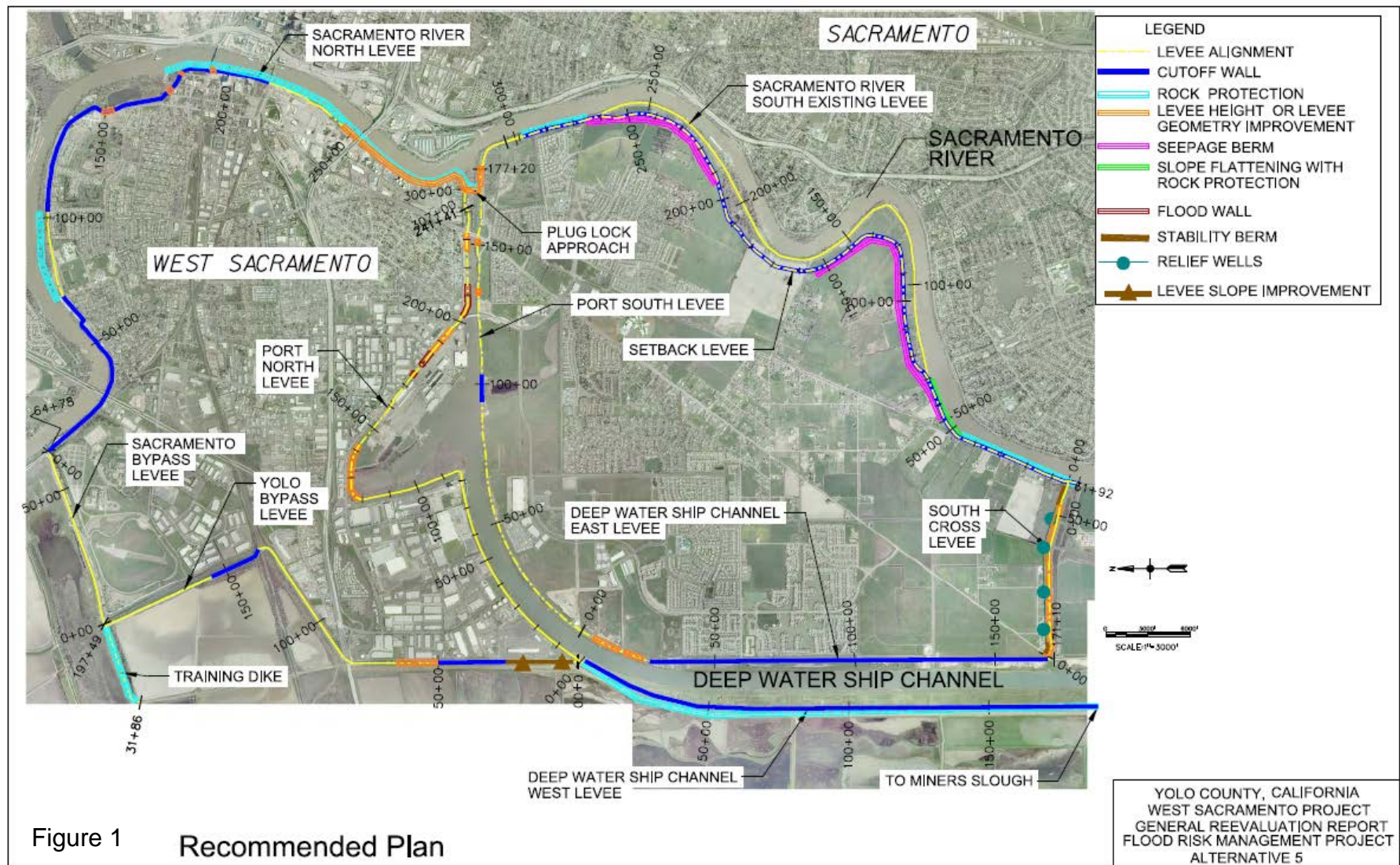
**Alternative 1 – Improve Levees** - This alternative would include construction of levee improvement measures to address seepage, stability, overtopping and erosion concerns identified for the Sacramento River, South Cross, Deep Water Ship Channel, Port of Sacramento, Yolo Bypass, and Sacramento Bypass Levees. This alternative provided positive net benefits, but other alternatives ranked higher in the benefit to cost analyses.

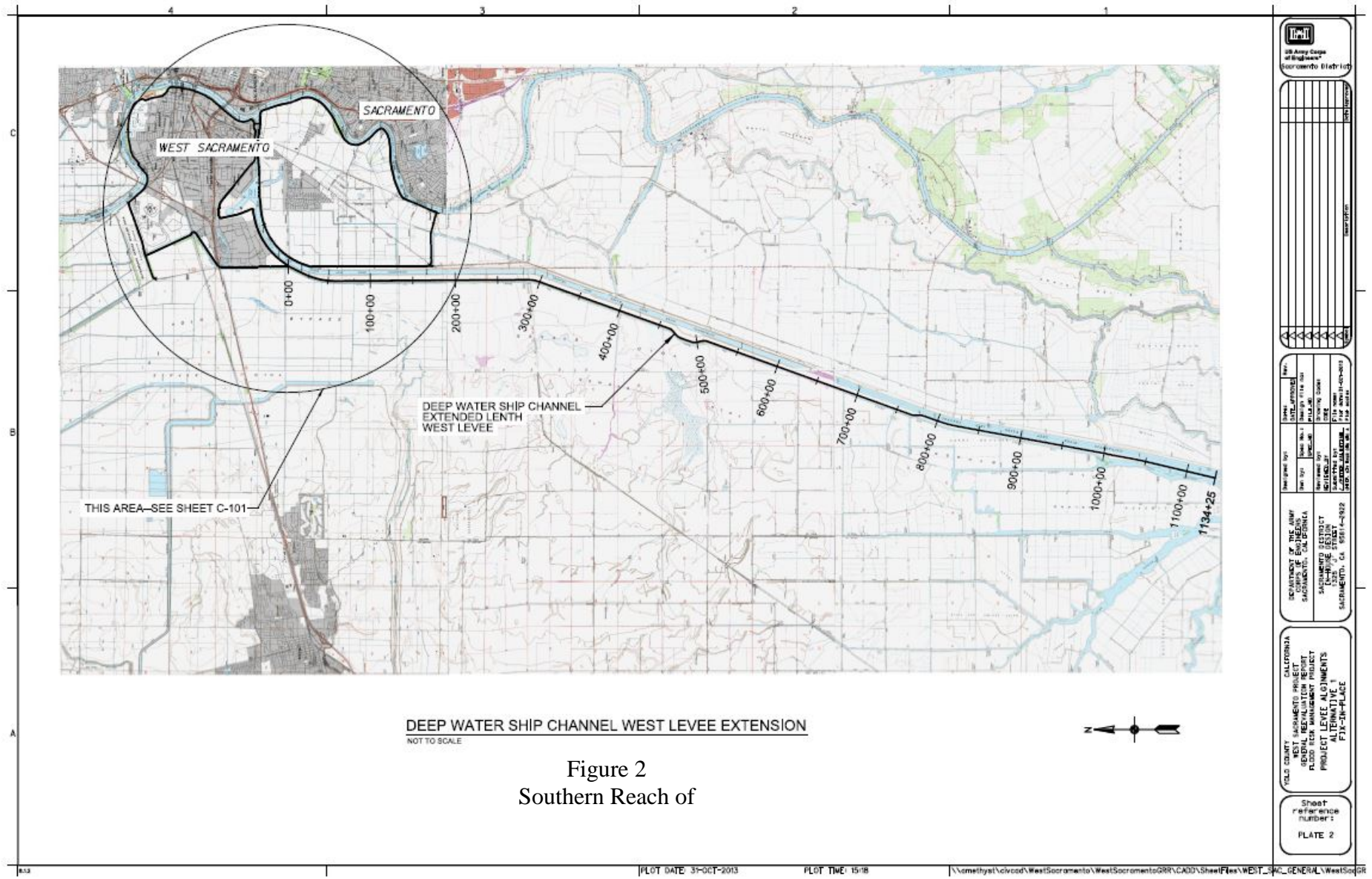
**Alternative 3 – Improve Levees and Deep Water Ship Channel Closure Structure** - This alternative would include the levee improvements discussed in Alternative 1 on the Sacramento River, South Cross, Yolo Bypass, and Sacramento Bypass training levees to address identified seepage, stability, erosions and height concerns. Levee repairs on the South Levees and portions of the Deep Water Ship Channel East and West Levees would be replaced by the construction of a closure structure in the Deep Water Ship Channel. This alternative provided positive net benefits, but other alternatives ranked higher in the benefit to cost analyses.

**Alternative 5 - Improve Levees and include Sacramento River South Setback Levee**

Alternative 5 would include the construction of levee improvements measures to address seepage, stability, erosion and height concerns identified for Sacramento River North, Yolo Bypass, Sacramento Bypass Training Levee, South Cross Levee, Deep Water Ship Channel East and West, and Port South. A setback levee would be constructed along the Sacramento River South reach.

Real Estate Division developed cost estimates which included lands and damages, relocation costs, and federal and non federal acquisition administrative costs for each alternative. The total project costs including real estate costs for each alternative were then analyzed by Economics Section to identify the National Economic Development (NED) Plan, which is the plan that reasonably maximizes the net benefits. Alternative 5 provides the most net benefits and therefore is considered the Recommended Plan. A real estate cost estimate for the Recommended Plan is located in Table 4 Section 12.





#### **4. Description of Lands, Easements, Rights of Way, Relocations and Disposals (LERRDs)**

Alternative 5 is the Recommended Plan, and a reach identification system was developed as shown in the Table 2, below.

The real estate cost estimate for the Recommended Plan was developed based on the conventional approach for development of feasibility level design. Cadastral Section has inventoried over 600 parcels that would be impacted by the project. During development of the REP, the real estate cost estimate was developed in accordance with ER 405-1-12 and based upon the footprints delineating project requirements developed by the Sacramento's Engineering Division. The Lands, Easements, Rights of Way, Relocations and Disposal (LERRDs) requirements for the REP include: the acquisition of flood protection levee easements, permanent road easements, temporary work area easements, borrow easements, and mitigation banks. For cost estimating purposes we developed costs for permanent and temporary land easements. The basis for the different types of acquisitions is as follows:

- Flood protection levee easements are required for the construction and operation and maintenance of project levee features. The easements vary in width and are delineated by the toe of existing levee and boundary of the seepage berms (within the project's limit), relocated levee segments and new seepage berms, slurry walls, sheet pile walls, slope flattening, and bank protection.
- 15 foot permanent easements along the landside and waterside edge of the flood protection levee easements, at a minimum, are needed for providing maintenance access to and for flood fighting purposes along the toe of the project features.
- Temporary work area easements are required for acquiring staging areas and haul routes along the length of the project.
- Borrow easements will be required for borrow sites that are not existing commercial sites. Borrow material is presently expected to be sourced from several locations for which easements are required including; newly identified borrow sites within approximately 25 miles of the study area, existing borrow sites identified for the Deep Water Ship Channel dredge disposal area, and the existing levees. Only small amounts will likely be supplied through use of readily available commercial supply.
- Mitigation areas will be acquired in mitigation banks and on site in the new setback levee area to be constructed in the Sacramento River South reach.
- Flowage easements will be required on lands between the new South River South setback levee and the Sacramento River.

TABLE 2: Proposed Design Features of the Recommended Plan Note: F.P.L.E. = Flood Protection Levee Easement, T.W.A.E = Temporary Work Area Easement, P.R.E. = Permanent Road Easement

Reach	Reach Length feet	Feature Length Ft	Improvement	Features	Easement Requirements	Ownerships
Yolo Bypass Levee	19,750				36 Acres F.P.L.E, - 11 parcels	6 Privately owned parcels 10 State of CA parcels 6 City of West Sacramento owned parcels
		3,860	landside slope	Flatten Landside Slope	36.64 T.W.A.E -11 parcels	
		2,500	landside slope/seepage	Flatten Landside Slope/ 40' Slurry Wall		
		1,900	Seepage	100' Slurry Wall		
Deep Water Ship Channel West Levee	100,260				847 Acres F.P.L.E.	8 privately owned parcels 30 City of West Sac parcels 5 State of CA parcels 4 USA parcels
		9,000	Seepage	85' Slurry Wall	47 parcels	
		7,000	Seepage	50' Slurry Wall		
		9,000	Seepage	75' Slurry Wall		
99,010	Erosion Protection	Bank Protection				
Deep Water Ship Channel East Levee	17,171				57 Acres F.P.L.E 50 parcels	31 privately owned parcels R.D 900 owned 12 parcels 15 City of West Sac parcels
		1,500	Seepage	120' Slurry Wall, DSM		
		7,055	Seepage	130' Slurry Wall, DSM		
		5,574	Seepage	50' Cut off Wall		

Reach	Reach Length feet	Feature Length Ft	Improvement	Features	Easement Requirements	Ownerships
Port South		1,000	Seepage	70' Cutoff Wall	12.8 Acres F.P.L.E.  25.6 Acres T.W.A.E.	Yolo and Sacramento Port parcel
South Cross Levee	6,400	1,340 5,000 50	Stability/ Seepage,	Stability Berm Embankment Fill Relief Wells /Embankment fill Raise Jefferson Blvd	20 acres T.W.A.E.  .18 acres F.P.L.E. 16 parcels	15 private owners parcels 4 Yolo County parcels 1 Rec. District 900 parcel
Sacramento River North Levee	30,700	14,300	Erosion Protection	Bank Protection	186.29 acres Bank Protection Easement. 209 parcels	23 State of CA parcels 46 Yolo County parcels 47 privately owned parcels 2 USA trust parcels 4 Sac and San Joaquin Drainage District parcels
		11,045	Seepage	30' Cut off Wall	187.21 acres T.W.A.E.- 81 parcels	1 RD 900 parcel
		1,470	Seepage	80' Cut off Wall		
		500	Seepage	45' Cut off Wall		
		5,520	Seepage	110' Cut off Wall		
		7,600	Height	Embankment Fill		

Reach	Reach Length feet	Feature Length Ft	Improvement	Features	Easement Requirements	Ownerships
Sacramento River South Levee (Setback Levee)	30,000	7,400	Erosion	Bank Protection	471 acres of fee title and permanent easements. 69 parcels (Some of these lands in setback area will be used for mitigation (42 acres/and + 450 acres borrow) 98.99 acres of T.W.A.E 58 parcels	8 Yolo County parcels 70 private owner parcels 10 State of CA. 4 City of West Sac parcels
		29,320	Seepage	Embankment fill Cut off wall/berm	Stone Protection	1 Sac County parcel
Stone Lock Plug Approach	570	540	Flow Direction	Embankment fill/ Sheet Pile wall/Stone Protection	7.04 acres F.P.L.E parcels, 13.35 acres of T.W.A.E. 4 parcels	1 Yolo County parcel 3 City of West Sac Parcels
Training Dike	3,000	3,000	Erosion Protection	Bank Protection	10.81 acres F.P.L.E, 2 parcels, 1.37 acres P.R.E. 3 parcels, 16.01 acres of T.W.A.E. 4 parcels	2 private parcels 2 State of CA parcels

**Mitigation Sites**

The current plan is to use lands acquired in fee for the construction of the South Levee setback area for project mitigation and to purchase credits from a mitigation bank if the area is insufficient. In terms of Giant Garter Snake Habitat, the mitigation for the 201 acres of upland (temporary impacts) will be done on site after construction through re-seeding of the construction sites. It will not require the purchase of additional acreage. Of the 107 acres for Valley Long Horned Elderberry Beetle, 31 acres will be done onsite in the setback area, the remaining acreage will be purchased at a mitigation bank.

**Table 3: Vegetation Impacts in the Study Area**

	GGS Upland* **	GGS Aquatic***	Riparian	SRA Habitat ***	Elderberry Shrubs **	Oak Woodland *	Shallow Water **	Wetlands
North Basin								
Sacramento River North Levee			22 acres (38 if no variance)	10 acres 33,333 LF	42 acres	8 acres	5 acres	5 acres
Yolo Bypass	5 acres	2 acres	2 acres		12 acres			2.5 acres
Sacramento Bypass Training Levee	5 acres		3 acres		1 acres			2.5 acres
South Basin								
South Cross Levee	4 acres	10 acres	5 acres		8 acres	4 acres		10 acres
Deep Water Ship Channel East Levee	10 acres	10 acres	2 acres		3 acres			10 acres
Port South Levee	2 acres	1 acre						1 acre
Deep Water Ship Channel West Levee	20 acres				5 acres			
Sacramento River South Levee (Alt 5)	155 acres		4 acres	2 acres 6,666 LF	36 acres	4 acres	9 acres	5 acres
TOTAL (Alt 5)	201 acres	23 acres	38 acres (60 acres- no variance)	12 acres 40,000 LF	193 shrubs (107 acres)	16 acres	14 acres	36 acres

\*State Listed \*\*Federal Listed \*\*\*State and Federal Listed

Environmental Impacts of and Proposed Mitigation/Compensation  
for the West Sacramento GRR<sup>1</sup> Alternative 5.

Table 4

Habitat Type	Potential Impacts	Duration of Impact	Mitigation/Compensation (Acres/Linear Feet)
GGS Upland and Aquatic	201 Acres	Single Construction Season	201 Acres (5k/ac)
GGS Upland and Aquatic	23 Acres	Permanent	69 Acres (60k/ac)
Riparian	38 Acres	Permanent	38 Acres (55k/ac) 38 Acres (75k/ac)
Shaded Riverine Aquatic Habitat (ESA Fish Species)	40,000 Linear Feet (12 acres)	Single Construction Season (Different Levee Reaches)	12 Acres- 40,000 Linear Feet Self Mitigating with on-site planting <sup>2</sup>
Shallow Water Habitat (ESA Fish Species)	14 Acres	Permanent	14 Acres (55k/ac)
Elderberry Shrubs	193 Shrubs 1,991 Stems (107 Acres)	Permanent	31 Acres (85k/ac) 1,107 credits (69 Acres) (4.5k/credit)
Oak Woodland	16 Acres	Permanent	10 Acres (50k/ac) 22 Acres (75k/ac)
Wetlands	36 Acres	Permanent	72 Acres (130k/ac)
Green Sturgeon	20 Acres	Permanent	Restore acres and conduct monitoring
<b>Total</b>	<b>448 Acres</b>		<b>577 Acres</b>

Notes:

<sup>1</sup> Assumes variance from USACE's vegetation guidance is granted for Sacramento River.

#### Fish and Wildlife Mitigation Required

Mitigation Bank = \$22,982,500

On-Site Mitigation = \$23,205,500

Total = \$46,188,000

**Borrow Sites**

It is estimated that a maximum of 9 million cubic yards of borrow material will be needed to construct the project. Because this project is in the preliminary stages of design, detailed studies of borrow needs have not been completed. For the purposes of NEPA/CEQA, a worst case scenario is being evaluated for the volume of borrow material needed. Actual volumes exported from any single borrow site would be adjusted to match demands for fill.

To identify potential locations for borrow material, soil maps and land use maps were obtained for a 25-mile radius surrounding the project area. The criteria used to determine potential locations were based on current land use patterns, soil types from U.S. Soil Conservation Service (SCS), and Corps' criteria for material specifications. These potential borrow locations are shown on the Borrow Site Map (Figure 3). The data from land use maps and SCS has not been field verified, therefore, to ensure that sufficient borrow material would be available for construction the Corps looked at all locations within the 25 miles radius for 20 times the needed material. This would allow for sites that do not meet specifications or are not available for extraction of material.

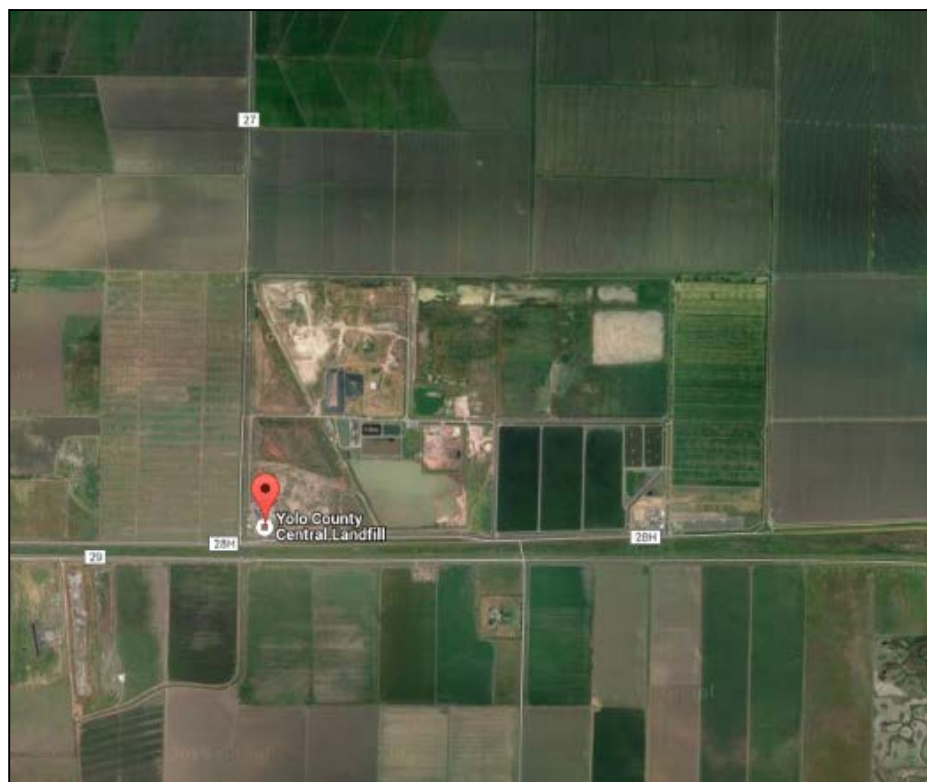
The excavation limits on the borrow sites would provide a minimum buffer of 50 feet from the edge of the borrow site boundary. From this setback, the slope from existing grade down to the bottom of the excavation would be no steeper than 3H:1V. Excavation depths from the borrow sites would be determined based on available suitable material and local groundwater conditions. The borrow sites would be stripped of top material and excavated to appropriate depths. Once material is extracted, borrow sites would be returned to their existing use whenever possible, or these lands could be used to mitigate for project impacts, if appropriate.

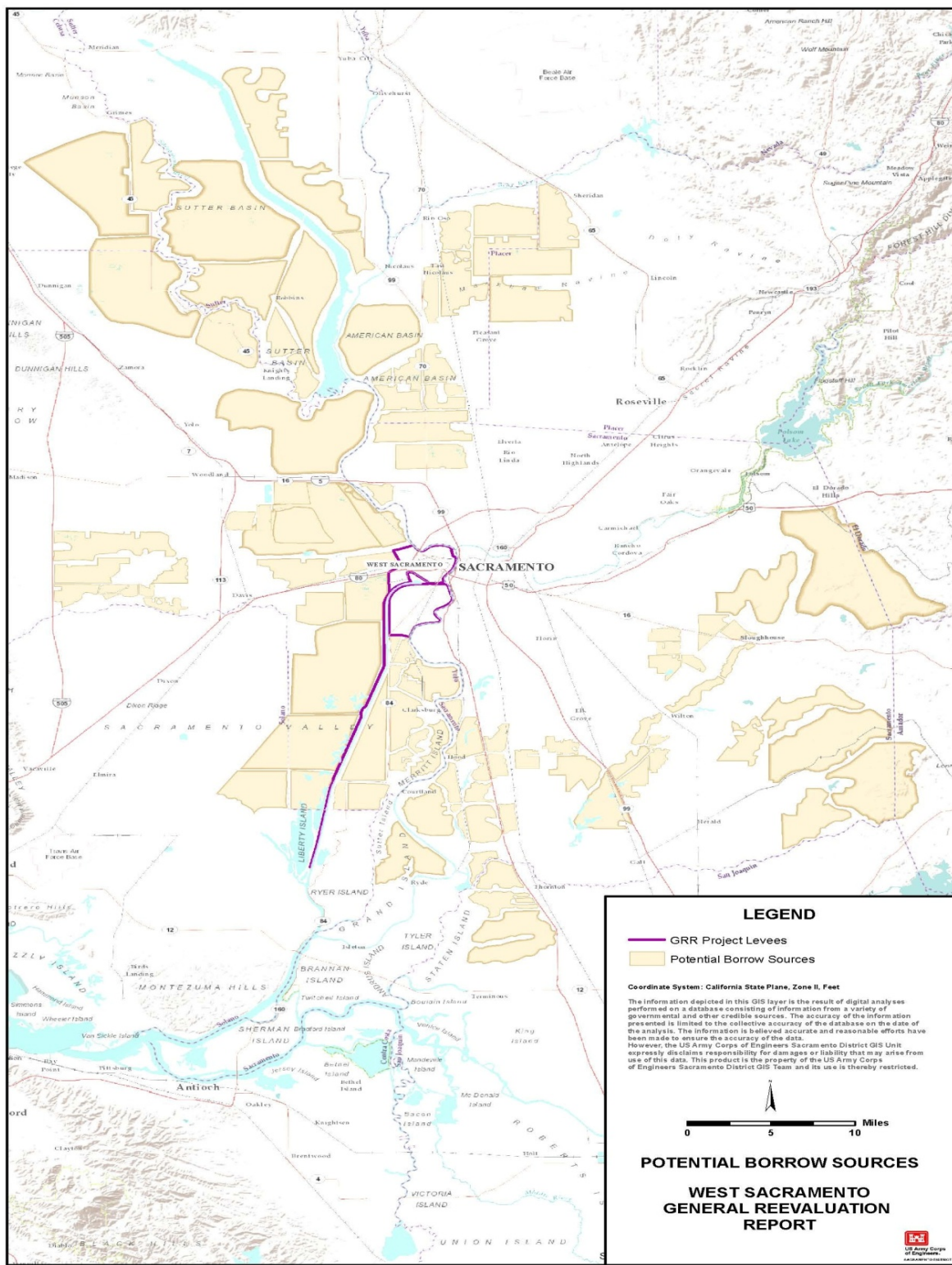
A potential borrow site has been located in the South Setback Levee area. There are 475 acres available for potential borrow. Borrow site real estate costs have been calculated and are shown Table 2.

**Disposal Site**

Yolo County Central Landfill located in Woodland, California will accept soil and construction/demolition recycling. Soil haul that involves a large amount of soil (greater than 500 cubic yards), will require a Waste Evaluation Form that can be downloaded on line. The least cost areas will be used for disposal sites.

**FIGURE 3**



**FIGURE 4 - Proposed Borrow and Disposal Sites**

There are approximately 7 railroad parcels in the North Levee Reach, 4 of which are owned/operated by Union Pacific and 3 of which are owned/operated by Sierra Northern Railway. There is 1 railroad parcel in the South River Levee reach, owned/operated by Union Pacific Railroad. There are 3 Union Pacific parcels in the Yolo Bypass Reach. The construction areas are working parallel or adjacent to the tracks and existing closure structures in these reaches and will not interfere with active railway activities.

## **5. LERRDs Owned by the NFS and Crediting**

In the event the Recommended Plan is authorized, crediting will follow standard procedures as set out in the model Project Partnership Agreement (PPA). No credit will be afforded to any lands or interests previously acquired and credited for any applicable Federal project. Credit will only be applied to the acreage within the project footprint, namely the lands or corridor required for the recommended Plan of improvements. Lands outside of the project requirements and lands that may be acquired for the sponsor's own purposes would not be creditable LERRDs. Only land deemed necessary that has not been previously cost shared on a project will be credited.

Corps' policy also prescribes that credit will not be afforded for lands purchased with Federal funds or grants where the granting of such credit is not permissible, whether as prescribed by statute, or as determined by the head of the Federal agency and administer such grants or programs. The Federal Emergency Management Agency (FEMA's) floodplain hazard mitigation and elimination grants are examples of such Federal grant programs where credit would not be allocated.

The Non-Federal sponsors own approximately 264 acres of the 527 acres required for project construction and OMRR&R in fee title according the County Assessor's office in the study area which are identified in the tract registers. The parcels owned by the Non Federal Sponsors are assumed sufficient for the estates needed. The City of West Sacramento is reviewing city owned parcels. The City of West Sacramento did provide comments on a spreadsheet regarding ownerships of City owned properties. The State of California, Department of Water Resources has assumed all Sacramento and San Joaquin Drainage District parcels and all RD 900 parcels would be available for flood projects. The coordination with the State owned parcels is ongoing. All restrictions, prior easements, or inconsistent encumbrances are not known at this time. There is relatively low risk to the sponsor owned lands being insufficient for project purposes because the gross appraisal conservatively estimates the unit costs for the estates required for project purposes and includes seven incremental and improvement contingencies for various unknowns including severance damages, unknowns for level of study definition, unforeseen aspects due to inaccessibility and lack of onsite inspections, cost/value increases from time and development pressure, negotiation latitude above fair market value, potential for excessive cost/awards, potential for unknowns natural resources or minerals, improvement/building contingencies. The contingency assessment should reduce risk and cause no impact to plan selection. The sponsor owned parcels are located in a table found in the Exhibit E cadastral maps and tract registers. The Non Federal Sponsors have the legal sufficiency to provide the lands required for the project as stated in DWR and WSAFCA Non-Federal Partners Real Estate Acquisition and Capability Assessment they provided to the Corps as shown in Exhibit A.

Sponsor Owned Lands (Approximations)	Permanent Levee Easements	Temporary Easements
City of West Sacramento	120.57 acres	22.29 acres
State of California/RD 900/Sacramento and San Joaquin Drainage District	144 acres	13.9 acres

## **6. Standard Federal Estates and Non Standard Estates**

The following standard estates are anticipated to support project purposes and features. Non-standard estates are not anticipated for the Recommended Plan.

### **Fee Simple Title**

The fee simple title to [the lands described in Exhibit C tract registers], subject however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

### **Flood Protection Levee Easement (FPLE)**

A perpetual and assignable right and easement in the land [described in Exhibit C tract registers] to construct, maintain, repair, operate, patrol and replace a flood protection levee, including all appurtenances thereto; reserving, however, to the owners, their heirs and assigns, all such rights and privileges in the land as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

### **Bank Protection Easement**

A perpetual and assignable easement and right-of-way in, on, over and across the land hereinafter described for the location, construction, operation, maintenance, alteration, repair, rehabilitation and replacement of a bank protection works, and for the placement of stone, riprap and other materials for the protection of the bank against erosion; together with the continuing right to trim, cut, fell, remove and dispose therefrom all trees, underbrush, obstructions, and other vegetation; and to remove and dispose of structures or obstructions within the limits of the right-of-way; and to place thereon dredged, excavated or other fill material, to shape and grade said land to desired slopes and contour, and to prevent erosion by structural and vegetative methods and to do any other work necessary and incident to the project; together with the right of ingress and egress for such work; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however to existing easements for public roads and highways, public utilities, railroads and pipelines.

### **Temporary Work Area Easements (TWAE)**

A temporary easement and right-of-way in, on, over and across for a period not to exceed 2/3 years after the execution of the construction contract, beginning with date possession of the land is granted to the Sponsor, as applicable, for use by the United States and/or the Sponsor, their representatives, agents, and independent contractors as a (work area), haul routes, including the right

to borrow and/or deposit fill, spoil and waste material thereon) (move, store and remove equipment and supplies, and erect and remove temporary structures on the land and to perform any other work necessary and incident to the construction of the West Sacramento Project, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

### **Permanent Road Easement (PRE)**

A perpetual and assignable easement and right-of-way in, on, over and across [parcel number] for the location, construction, operation, maintenance, alternation and replacement of (a) road(s) and appurtenances thereto; together with the right to trim, cut, fell and remove there from all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; (reserving, however, to the owners, their heirs and assigns, the right to cross over or under the right-of-way as access to their adjoining land at the locations indicated in the tract register); subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

### **Borrow Easement**

A perpetual and assignable right and easement to clear, borrow, excavate and remove soil, dirt, and other materials from (the land described in Exhibit C Tract register) subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges in said land as may be used without interfering with or abridging the rights and easement hereby acquired.

### **Flowage Easement**

The perpetual right, power, privilege and easement permanently to overflow, flood and submerge (the land described Exhibit C tract register (and to maintain mosquito control) in connection with the operation and maintenance of the project as authorized by the Act of Congress approved \_\_\_\_, and the continuing right to clear and remove and brush, debris and natural obstructions which, in the opinion of the representative of the United States in charge of the project, for use by [the CVFPB and/or the Sacramento and San Joaquin Drainage District], its representatives, agents, and contractors, may be detrimental to the project, together with all right, title and interest in and to the timber, structures and improvements situate on the land <sup>1</sup> (excepting \_\_\_\_, (here identify those structures not designed for human habitation which the United States determines may remain on the land)); provided that no structures for human habitation shall be constructed or maintained on the land, that no other structures shall be constructed or maintained on the land except as may be approved in writing by the representative of the United States in charge of the project, and that no excavation shall be conducted and no landfill placed on the land

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<sup>1</sup> Any structures existing in areas that will be allowed to remain must be evaluated using the same criteria that would be used to grant permission for a new structure to be placed in the easement, in coordination with the operational office..

without such approval as to the location and method of excavation and/or placement of. landfill;<sup>2</sup> the above estate is taken subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easement hereby acquired; provided further that any use of the land shall be subject to Federal and State laws with respect to pollution.

## **7. Description of Any Existing Federal Project in or Partially in the Proposed Project Area**

All previous federal projects are described in the main report in section 1.5 of the main General Reevaluation Report. A brief summary is provided below.

<b>Sacramento Urban Area Levee Reconstruction Project</b>
Construction of berms to improve stability and manage seepage at two relatively small sites along the right bank of the Sacramento River near the Lighthouse Marina and approximately six miles of levee along the right bank of the Sacramento River extending from near the Barge Canal entrance downstream to near the South Cross levee. Construction began in November 1990 and was completed in 1992.
<b>Sacramento Metropolitan Area, 1992 and 1999 Authorization (West Sacramento Project)</b>
Raising and installing a slurry wall along 4.7 miles of the east bank of the Yolo Bypass levee from the Sacramento Bypass south to the Navigation Levee. Reconstructing and raising the levee along one mile of the south bank of the Sacramento Bypass, including backfill of a drainage ditch and placing riprap along the levee.

In the 1990's the Corps of Engineers, Sacramento District completed a study to evaluate the existing level of flood protection and increased levels of flood protection in the Sacramento Metropolitan area outside the American River Watershed Investigation. The study area included components of the Sacramento River Flood Control Project, included levees along the Sacramento River, Sacramento Weir, and portions of Yolo and Sacramento Bypass Channels. The Selected Plan consisted of levee raising along the south levee of the Sacramento Bypass and continuing south along the east levee of the Yolo Bypass east levee. Levees were raised along 5,800 LF of the south levee of the Sacramento Bypass and 24,800 LF of the Yolo Bypass East levee.

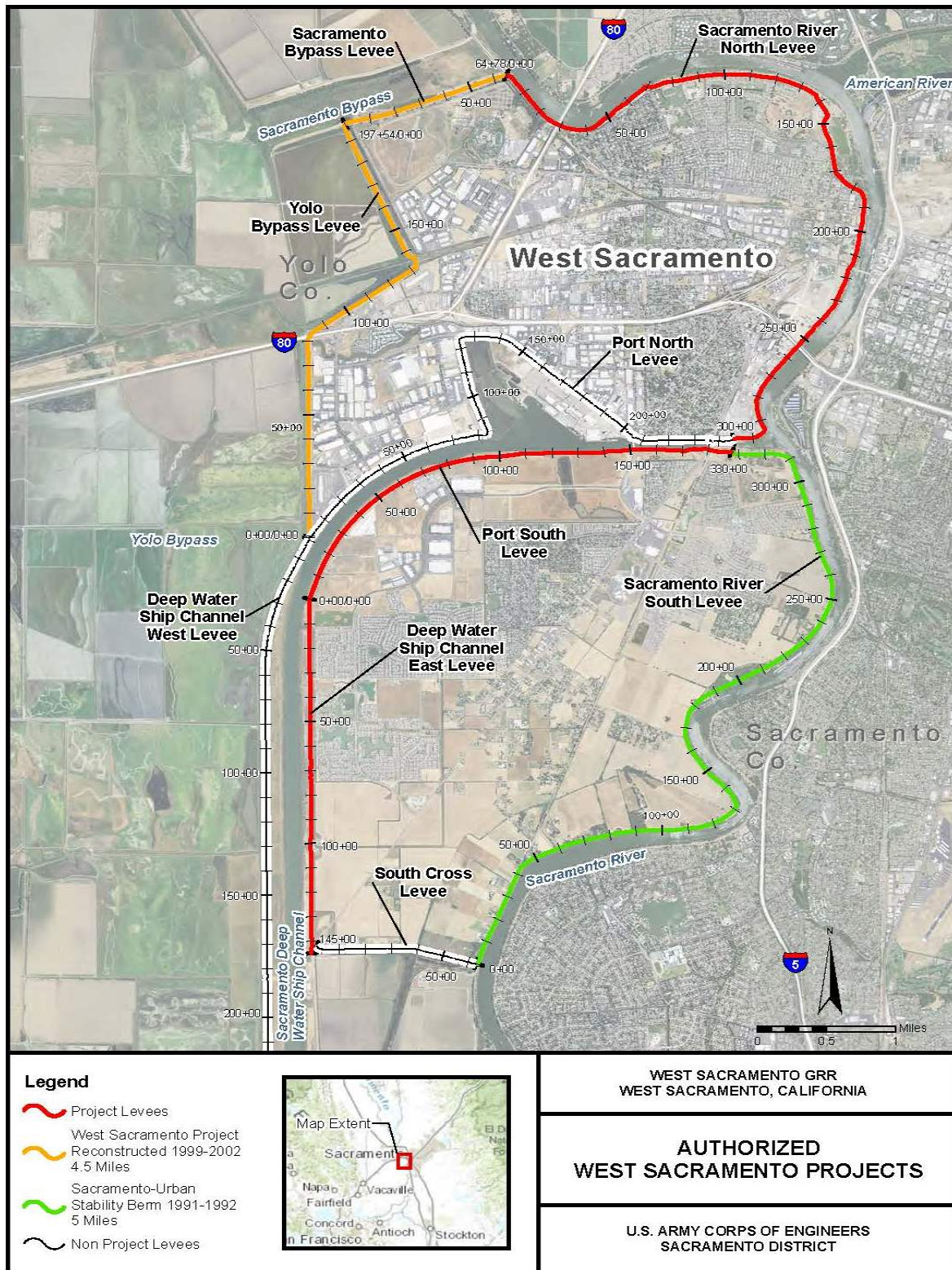
As proposed in the Recommended Plan, levee raising will occur landward along the south side of the Sacramento Bypass and south of the Southern Pacific Railroad (SPRR) on the Yolo Bypass, and waterward between the Sacramento Bypass and the SPRR. Since the levees which were raised as part of the Selected plan were component of existing federal project (Sacramento River Flood Control Project and Sacramento Deep Water Ship Channel), only the additional lands needed for the levee raising proposed in the Recommended Plan have been included in the baseline cost

<sup>2</sup> If sand and gravel or other quarriable material is in the easement area and the excavation thereof will not interfere with the operation of the project, the following clause will be added: "excepting that excavation for the purpose of quarrying (sand) (gravel) (etc.) shall be permitted, subject only to such approval as to the placement of overburden, if any, in connection with such excavation;"

estimate. According to the County Assessor's Office, the existing Yolo Bypass project levees and construction rights of way for the Recommended Plan are owned in fee by Reclamation 537, Reclamation 900, State of California, Sacto and Yolo Port and the Union Pacific Railroad. Based on the foregoing, it is assumed that the non-Federal sponsor and Corps have sufficient rights, obtained in furtherance of prior Federal projects, to accomplish work on the existing levees. Access is already available to all construction areas on the Yolo Bypass Levee Reach and the Sacramento Deep Water Ship Channel, the Sacramento River North Levee Reach, the Sacramento Bypass Reach, Sacramento South Levee Reach, the Port South Levee Reach by virtue of the existing projects.

The following map shows real estate acquisitions that occurred in the past as part of these projects.

Figure 5

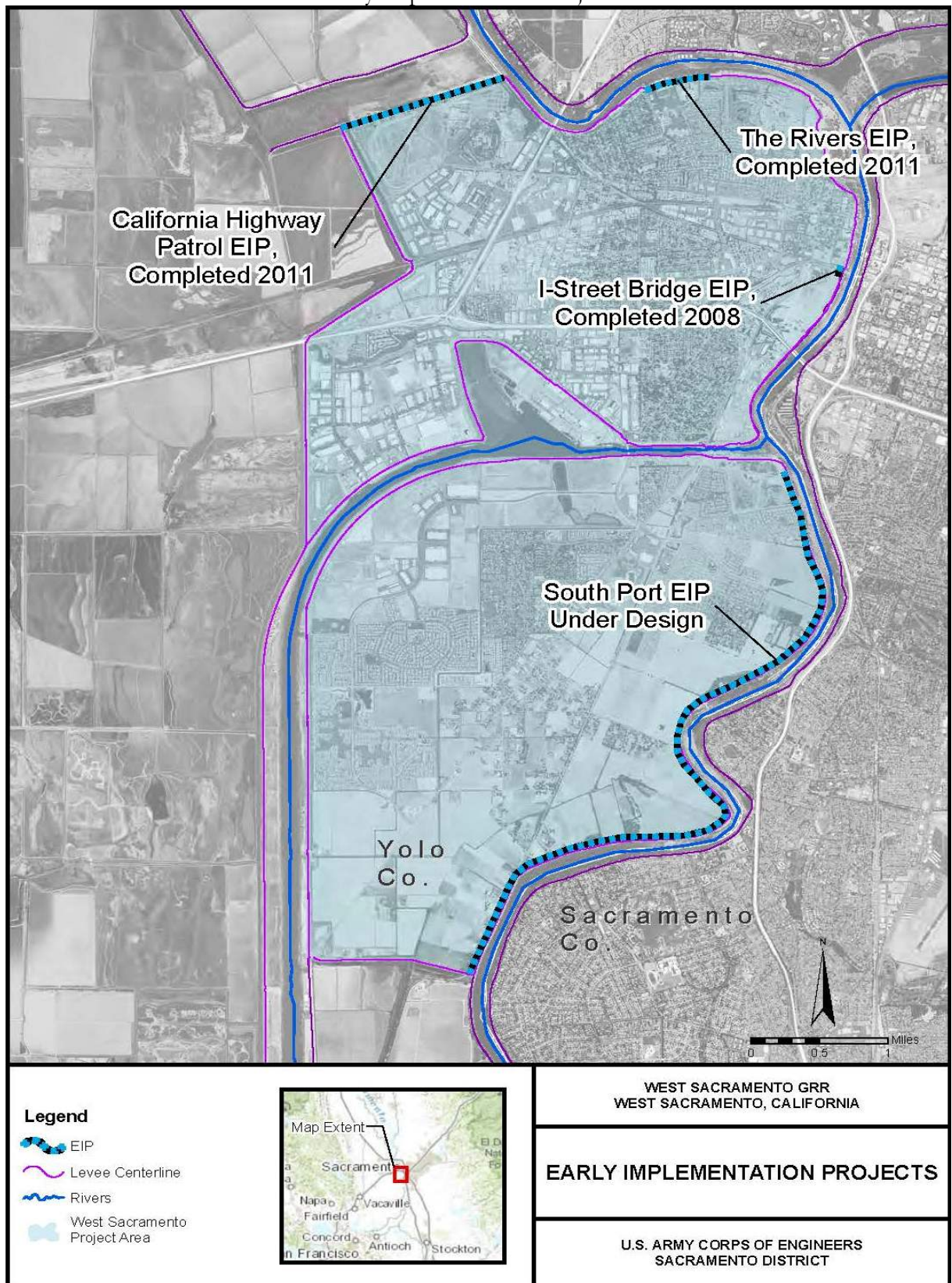


West Sacramento Levee Improvement Program. WSAFCA, in cooperation with the California Department of Water Resources and the Central Valley Flood Protection Board, have initiated urgently needed improvements to the Federal Project levees protecting West Sacramento. These improvements address identified deficiencies in the levee system based on recent recognition of seepage problems and levee investigations. A catastrophic failure of the levee system around West Sacramento would imperil the health and safety of approximately 47,000 residents, shut down two of California's important freeways (I-80 and U.S. Highway 50), an important rail link from the San Francisco Bay area to the rest of the country, and cause significant residential, commercial, and industrial property damage. WSAFCA and the State are addressing these challenges by moving aggressively forward with the WSLIP by constructing Early I Implementation Projects (EIP) at what are considered the most vulnerable locations. One EIP site, the I Street Bridge site was completed in 2008. Construction was completed at two other EIP sites, identified as the California Highway Patrol (CHP) and the Rivers sites, in 2011. The Southport EIP site is in construction. In addition to approval to modify a federal levee through Section 408, the I Street Bridge site received approval for credit eligibility for levee modifications pursuant to Section 104 of WRDA of 1986.

The CHP and Rivers EIP sites received approval to modify a federal levee through Section 408. However, due to a change in policy the projects were not approved for credit under Section 104 of WRDA 1986. WSAFCA will seek credit approval through Section 221 of the Flood Control Act of 1970 as amended by Section 2003 of WRDA 2007. The final implementation guidance for Section 221 of the Flood Control Act of 1970 as amended is currently being updated.

The West Sacramento GRR Recommended Plan has adopted the Southport EIP site and the I Street Bridge site from the West Sacramento Levee Improvement Program. Construction of the I Street Bridge site is completed and acquisitions and construction is in progress on the Southport EIP site. The location of these EIP sites is shown on Figure 4.

FIGURE 6 Early Implementation Projects



### Sacramento River Bank Protection Project.

Current designs proposed in the Recommended Plan avoid erosion work previously completed in the Sac Bank Project. The erosive forces from flood events on the Sacramento River have weakened the 100 year-old levees. In response to requests from the State of California, Congress authorized the Sacramento River Bank Protection Project in two phases to maintain levee integrity and other flood control facilities associated with the Sacramento River Flood Control Project. Phase I of the Sacramento River Bank Protection Project started in 1960 and was completed in 1975 with the installation of 480,000 lineal feet of rock revetment bank protection. Phase II was authorized by Congress in 1975 and provided for an additional 405,000 lineal feet of bank protection. To date, approximately 390,000 lineal feet of Phase II have been completed with continued construction planned. Expanded authority has been authorized under WRDA 2007 to provide for an additional 80,000 lineal feet of bank protection before the completion of Phase II.

As time goes on and flood seasons pass, an increasing number of sites are requiring some type of maintenance and/or repair work to provide consistent adequate flood control capability. During the 2010 inspection 187 sites were identified as in need of repair. Some of these sites are deemed “critical” and potentially subject to failure during a flood event. While these critical sites are being monitored to provide early warning for emergency response, emergency flood fighting may be required to prevent levee failure and subsequent flooding unless needed repairs are made prior to the next flood event. Funding for repairs does not meet the needs of the system.

Approximately 7 sites along the Sacramento River in the West Sacramento Project area were identified during the 2010 inspection that are considered subject to bank erosion in the form of bed or levee toe scour and wave-wash that threatens the stability of the adjacent levee. Two of the sites are currently being repaired with construction of a setback levee. If for any reason the new bank protection is placed into an existing Sacramento Bank Protection site LER credit will only be considered if the construction footprint is larger (only the area located outside the existing easement) or located in a different location where no easements currently exist.

### Sacramento Deepwater Ship Channel

The Sacramento Deepwater Ship Channel is a 43-mile long channel formed by widening and deepening the existing channel from the Suisun Bay to Rio Vista and by excavating a new channel from that point to Lake Washington in West Sacramento. The channel project also includes a triangular harbor and turning basin in Lake Washington and a 1.5 mile shallow-draft barge canal with an 86-foot-wide and 600-foot long navigation lock between the harbor and the Sacramento River.

The channel project was completed in 1963, with the Sacramento-Yolo Port District as the local sponsor. A feasibility report that evaluated the need for a deeper draft channel was completed in 1980. The report recommended enlarging the Suisun Bay and Sacramento River Deep Water Ship Channels from New York Slough to the Port of Sacramento from the existing 30 foot deep channel to 35 feet. Dredging was completed from river mile 41.5 to 35 in April 1991. The presence of utilities in the channel led to the project being stopped. A Limited Reevaluation Report (LRR) was started by the Corps in 2002 to verify the economic and environmental feasibility of continuing the authorized and partially completed deepening project. The draft LRR is currently on hold and the completion date has not been established.

The barge canal and lock, which has a 4-foot lift at normal pool elevation, provides for the transfer of barges between two different water surface elevations. A 135-foot span, single leaf combination highway and railroad bridge crosses the canal at the harbor end of the lock. The bridge and lock were in “caretaker” status under the jurisdiction of the Corps until its transfer to the City of West Sacramento Redevelopment Agency in 2006. The lock is permanently closed except in emergency or special situations; future operation is uncertain. The lock acts as a barrier between the Sacramento River and the DWSC and will be evaluated as part of this General Reevaluation Report.

The Corps already has perpetual easements and right of way for the Deep Water Ship Channel for operations and maintenance purposes on the existing levees, patrol roads, and disposal areas. Proposed construction features in this area include bank protections and slurry walls. The bank protection was not included in the Corp existing easement footprint and was valued as a new easement requirement. New Staging and temporary easements will be needed for the project.

## **8. Description of any Federally Owned Land Needed for the Project**

There are a total of 7 federally owned parcels located in the project area. All parcels are owned by the United States. There are 4 federally owned parcels along the Deep Water Ship Channel West Levee Reach estimated at 69 acres. The federal parcels in the construction area are portions of the ship channel and portions of a drainage canal flowing parallel to the deep water ship channel. There are USA owned parcels utilized by the Corps (Bryte Maintenance Yard) located in the North Levee Reach estimated at 8.25 acres. There are no other federally owned lands in the project area.

Table 5: Parcels held in Federal Trusts FPLE – Levee Easement, TWAE - Temp Easement

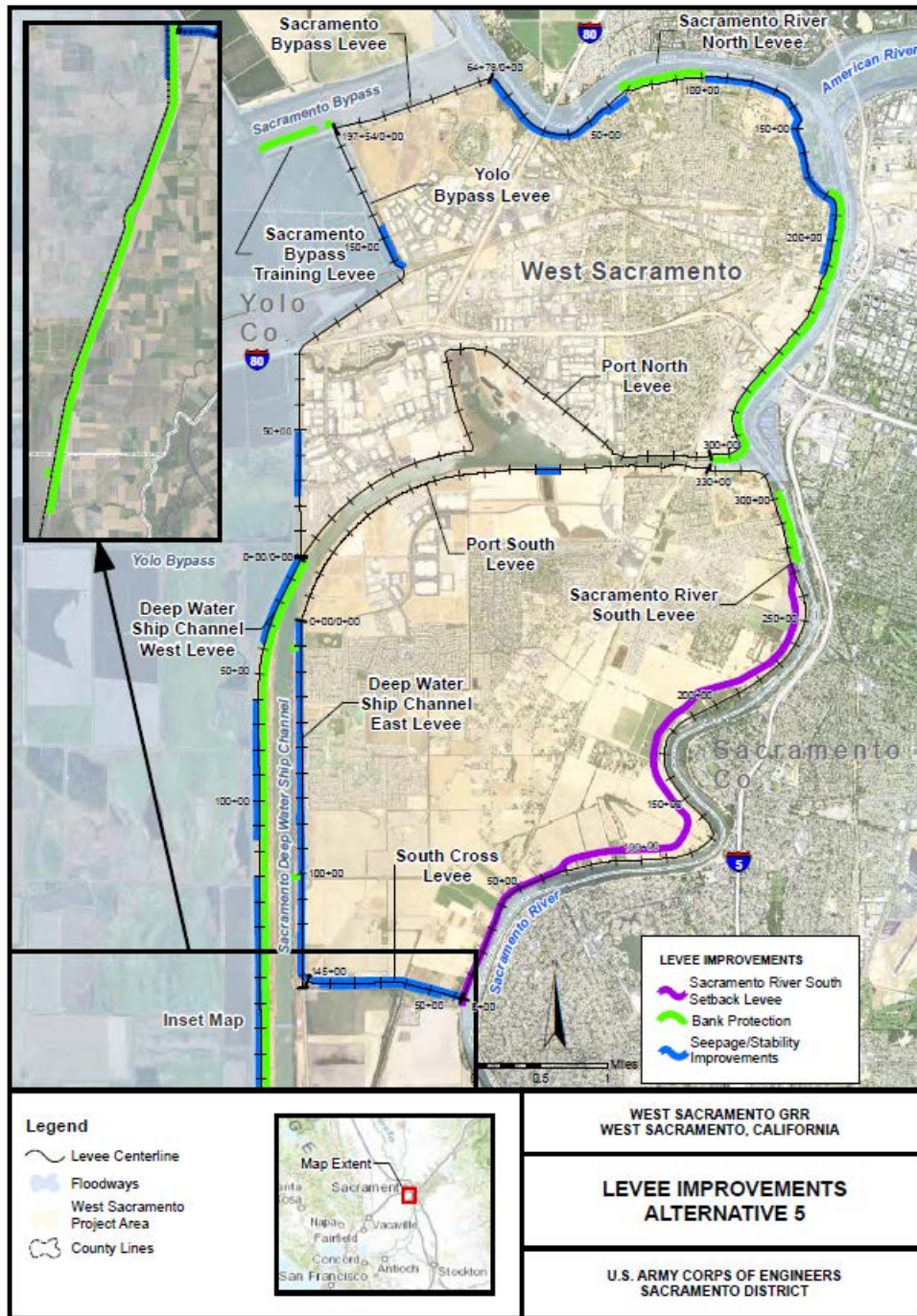
Reach Description	Parcels	Acreage	FPLE	TWAE
Deep Water Ship Channel West	4	353	54.17	0
North Levee Reach (Bryte Yard)	2	8.25	5.75	.104

## **9. Application of Navigational Servitude to the LERRD's Requirement**

The Recommended Plan, a re-evaluated plan of improvement of an authorized flood risk reduction project, includes erosion and bank protection improvements along the Sacramento River (water) side of the levees. Since landside access will likely be unavailable for the placement of rock for bank protection purposes, the navigational servitude will be utilized during project construction to accommodate barges carrying project materials to the project construction site.

## 10. Project Map

FIGURE 7



## 11. Induced Flooding

### Hydraulic Impact Evaluation

Hydraulic impacts of the West Sacramento GRR alternatives were evaluated using the same process the Hydrologic Engineering Center (HEC) developed in evaluating system-wide hydraulic impacts of proposed modifications to the levees of the Sacramento River Flood Control Project (SRFCP). The process utilized risk analysis methods that followed USACE policy as outlined in ER 1105-2-101.

The purpose of this evaluation was to determine if any of the final array of alternatives could cause potential system-wide impacts. Using the model HEC -RAS created for the Sacramento River Flood Control Project (SRFCP) levees, the following three scenarios were created:

- Future without-project baseline condition
- Alternative 1: Fix in place
- Alternative 5: Fix in place with a Sacramento River Setback

Alternative 3 was not analyzed specifically since it includes a portion of Alternative 1 plus a closure structure along the Deep Water Ship Channel. The Deep Water Ship Channel closure structure will not impact the water surface elevations within the SRFCP as it acts a barrier to preventing flow into the Port of Sacramento where the water surface elevation is driven by tidal influences significantly downstream. Alternative 5 includes portions of Alternative 1 with a 4.25 mile setback levee on the Sacramento River south of the Deep Water Ship Channel sector gates. Based on the 408 applicant's model results, there is a slight increase in stage downstream of the setback at the Pocket (0.13 foot and 0.17 foot rise for the 100-year and 200-year, respectively).

Potential impacts are identified from Flood Damage Reduction Analysis (FDA) model results when an increase in the Annual Exceedance Probability (AEP) and a reduction in conditional non-exceedance probability (CNP, also referred to as "assurance") occur at locations throughout the system when compared to the hydraulic baseline condition. The median AEP is computed directly from the inflow discharge-exceedance probability, the inflow-outflow and stage-discharge relationships that are defined at each index location. The expected AEP incorporates uncertainty in these relationships. Typically, an increase in water surface elevation without a change in the levee height will result in an increase in AEP and a reduction in CNP, which indicates an increase in the level of risk.

The following changes in AEP and CNP were identified based on comparison of the two alternatives and the future without project baseline condition:

- There was no significant change in median AEP
- There was no significant change in expected AEP (rounded at three significant figures)

There are small changes in the CNP/assurance, mostly in the thousandths place. For additional information, see the Hydraulics Appendix or The Systems Risk Technical Memorandum (USACE, May 2013). Based on this hydraulic analysis, no anticipated increased flooding of any significance is anticipated from implementation of the Recommend Plan with the exception of the Southport Setback Levee where, by purposeful design, there will be induced flooding in the designated setback area.

As noted above, the Recommended Plan includes a 4.25 mile setback levee on the Sacramento River south of the Deep Water Ship Channel sector gates. This feature is being constructed by the non-Federal sponsors under the authority of Section 408. Hydraulic modeling for this feature was performed by the non-Federal sponsors and reviewed by the Corps as part of the 408 application process, and the modeling results indicate there is a slight increase in stage downstream of the setback at the Pocket (0.13 foot and 0.17 foot rise for the 100-year and 200-year, respectively). Consequently, implementation of the Recommended Plan, with the South Port setback levee, will result in induced flooding of the designated setback area. The acquisition of flowage easements, prohibiting in the placement of habitable structures in the flowage easement area, will be required for project implementation. The costs of these easements are included in the cost estimate of this REP and the GRR.

The non-Federal sponsors presently have flowage easements for occasional flooding over the privately owned lands within the Sacramento and Yolo Bypasses. These easements were acquired in the 1940s and 1950's as part of the SRFCP. Existing flowage easements were reviewed when the prior projects were implemented and it was reported that none of those easements contained limitations on depth, duration or frequency of flooding. With the exception of the South Port setback levee, noted above, Recommended Plan will not induce any significant change in expected AEP.

## **12. Cost Estimate Summary for Lands and Damages and Relocations**

The following table reflects a preliminary estimation of the costs of acquiring the required LERRD's to support the construction, operation and maintenance of the Recommended Plan to assist in the determination of federal interest for the cost benefit analysis. The date of the approved cost estimate was June 2013.

TABLE 6A: COST TABLES Recommended Plan

Features	Cost	Contingency	Total Costs Rounded
Code of Accounts 01	FEDERAL		
Fed RE Admin Account 01	\$4,251,250	(5%) \$223,750	\$4,475,000
Account 01	NON FEDERAL		
Levees, O&M Roads, Staging Areas /Relocation lands and improvements	\$52,656,900	Incremental Real Estate Costs 35% Severance Damages 25% \$78,985,200	\$131,642,000
Non RE Fed Admin	\$11,053,250	(5%) \$581,750	\$11,635,000
PL 91-646 Relocation Assistance Payments	\$693,750	(25%) \$231,250	\$1,025,000
		SUBTOTAL	\$148,777,000
Utility Relocation Costs Account 02	\$64,020,000	(28%) \$17,926,000	(Rounded) \$81,946,000
			TOTAL LERRD's \$230,723,000

Table 6B

Type of Fish and Wildlife Mitigation 06 Account	Cost
Mitigation Banks	\$22,982,500
On Site Mitigation	\$15,351,000
Total Mitigation Costs	\$38,333,500

### 13. Relocation Assistance Benefits (as required by the Relocation Assistance and Real Property Acquisition Policies Act, PL 91-646)

The Non-Federal Sponsors must comply with the Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970, as amended, 42 U.S.C. 4601, *et seq.* (P.L. 91-646, -the Uniform Act) and provide relocation assistance to residences and businesses within the project area that are “displaced” as defined in the Uniform Act, as a consequence of project implementation. The Non-Federal Sponsors have prepared a draft relocation plan, which the Corps has reviewed.

The relocation inventory was created by viewing conceptual designs over aerial photographs. The estimated costs of such potential displacements are required for estimating project costs only and will be refined by the Non-Federal Sponsors when construction designs are completed.

TABLE 7

Reach Station ID	Residence, Business	Total Cost includes 25% contingency
Sacramento River North Levee Temporary Relocations During Construction	11 - 52	\$472,500
Sacramento River South Setback Levee	20	\$552,500
Total	31	\$1,025,000

**Availability of Replacement Housing/Business Properties:** There is available replacement housing, temporary housing and available land for relocating businesses in West Sacramento.

In the Sacramento River North Reach, there are currently 11 homes that need utilities removed and replaced during the construction of a cut off wall in the levee located near their residences. This will require temporary residential relocations. In addition there are 40 vacant lots that may be developed by the start of construction in this reach. As such, there is the potential for the temporary residential relocations to increase to a total of 52. Costs estimate of \$100,000 will be incorporated into total project costs to include this future scenario.

The foregoing impacts and estimates relating to potential displacements and the anticipated need to provide relocation assistance benefits are provided exclusively for project cost estimating purposes only and are not intended to be relied upon for provision of benefits and/or the payment of the estimates referenced herein.

#### **14. Mineral/Timber Activity**

There are no active mineral or timber activities in the project construction locations.

#### **15. Non-Federal Sponsor's Ability to Acquire**

The State of California Central Valley Flood Protection Board and West Sacramento Area Flood Control Agency have partnered with the Corps on several prior projects and has a full Real Estate staff capable of fulfilling its' responsibilities as a non-Federal sponsor.

The assessment of Non-Federal Sponsor's Real Estate Acquisition Capability has been provided to WSAFCA and is included in Exhibit A.

**16. Zoning Anticipated in Lieu of Acquisition**

The project does not propose use of a zoning ordinance that would essentially facilitate property acquisition by prohibiting certain uses of property instead of purchasing the property. No such ordinance is proposed.

**17. Acquisition Schedule**

The non-Federal sponsors will be directed to begin real property acquisition for the project only after the Project Partnership Agreement (PPA) is fully executed. Construction is proposed to take approximately 18 years if each reach is constructed sequentially. The construction reaches have been prioritized based on a variety of factors, including the condition of the levee, the potential damages that would occur due to levee failure, and construction feasibility considerations, such as the availability of equipment at any given time. The tentative schedule of construction is shown in below. The durations are for construction activities only, and do not include the time needed for design, right-of-way, utility relocation, etc. A standard risk letter has been sent to the non-Federal sponsors advising of the risks associated with early acquisition of properties before the execution of the PPA or prior to the Government's formal notice to proceed.

Durations of each tasking after the PPA is executed is estimated at 3 to 6 months per construction contract.

REAL ESTATE ACQUISITION SCHEDULE				
Project Name: West Sacramento GRR Contracts	COE Start	COE Finish	NFS Start	NFS Finish
Receipt of preliminary drawings from Engineering/PM	2011	2012		
Receipt of final drawings from Engineering/PM	2015	2020		
Execution of PPA/Finalize Chief's Report	April 21, 2016			
Formal transmittal of final drawings & instruction to acquire LERRDS	2020			
<b>Years for Construction Sequence and Duration</b>			Duration	Ending
South Setback Levee			4 years	2017
North Levee			2 years	2020
Yolo Training Dike			75 days	2015
Yolo Bypass North and South			5 years	2019
Deep Water Ship Channel East			3 years	2029
Deep Water Ship Channel West			3 years	2020
Port South			2 years	2017
South Cross Levee				
Conduct Landowner Meetings			2015	2029
Prepare/review mapping & legal descriptions			2015	2029
Obtain/review title evidence			2015	2029
Obtain/review tract appraisals			2015	2029
Conduct negotiations			2015	2029
Prepare/review condemnations			2015	2029
Perform condemnations			2015	2029
Obtain Possession			2015	2029
Complete/review PL 91-646 benefit assistance			2015	2029
Certify all necessary LERRDS are available for construction			2015	2029
Prepare and submit credit requests			2015	2029
Review/approve or deny credit requests	2015	2030		

**18. Description of Facility and Utility Relocations**

On January 10, 2013, the Corps issued Real Estate Policy Guidance Letter No. 31--Real Estate Support to Civil Works Planning Paradigm (3x3x3) ("PGL No. 31") establishing additional Corps policy guidance for feasibility-level real estate efforts directed at identifying, defining and estimating the costs of utility/facility relocations resulting from project implementation for planning and budgeting purposes. In qualifying instances, a real estate assessment, in lieu of an attorney's preliminary opinion of compensability, may be prepared and utilized for such purposes (although a final attorney's opinion of compensability will be required for specified relocations prior to execution of the Project Partnership Agreement between the Corps and the non-Federal sponsors.).

The Utility/Facility Inventory table, maps and cost estimates discussed herein and available in Exhibit D sets forth the following information: the utilities/facilities falling within the project area that are presently anticipated to be impacted by the construction, operation and maintenance of the project thus requiring "relocation" (as defined in applicable law and regulations); the District's preliminary efforts to identify owners with compensable interests in the impacted utilities/facilities and eligibility for the provision of a substitute or replacement facility under applicable law and regulations; and identification of the non-Federal sponsors' performance and cost responsibilities in connection with the identified relocations for this cost-shared project.

Consistent with requirements of PGL No. 31, the preparation of a real estate assessment is appropriate for this feasibility study because the estimated total cost to modify all project utility/facility relocations identified in the Utility/Facility Inventory (including the value of any additional lands that may be required for perform the relocations) for the selected plan do not exceed 30 percent of estimated total project costs. Here, total project costs are estimated at 1.6 billion dollars and the utility relocations are estimated at \$90,000,000 which is below the 30% threshold.

The real estate assessment discussed herein, and presented in Exhibit D, is based upon the following assumptions to assist in preliminarily analyzing and determining compensability for Study planning and budgeting purposes:

(1) If an impacted utility/facility is likely supported by a permit that has been issued to the utility/facility owner by the underlying property owner, and the terms of the permit include conditional language stating the utility/facility owner must relocate the impacted utility/facility at its own expense at request of the underlying fee or easement owner, the relocation was categorized as a non-compensable relocation, the costs of which are borne by the utility/facility owner and/or the non-Federal sponsor, and not included in the total project cost estimate.

(2) If the owner of the impacted utility/facility likely has an easement or real property interest in the underlying land, and the utility/facility so impacted preliminarily appears to meet the criteria for the provision of a substitute and/or replacement facility under the substitute facilities doctrine, the relocation was categorized as a compensable relocation, the costs of which are borne by the non-Federal sponsor and included in the total project cost estimate.

(3) Impacted utilities/facilities requiring relocation that likely intercept and/or convey drainage blocked by levees or floodwalls from the protected side of the waterway with measures

such as intercepting ditches, ponding areas, pumping plants, gravity outlets, and pressurized conduits, were preliminarily categorized as project features; thus an item of construction to be cost shared and are included in the total project cost estimate. These project features have not been included in the Utility/Facility Inventory, however, with the exception of costs to increase the size of the facilities to meet special local needs (including betterments), which costs are borne 100% by the non-Federal sponsors and are not included in the total project cost estimate.

Final Attorney's Opinions of Compensability will be completed during the PED Phase and prior to the execution of the Project Partnership Agreement, as well as prior to any notice to proceed to obtain lands and perform relocations by the non-Federal sponsors.

Various utilities/facilities are located within the project boundaries and must be relocated to facilitate project construction. The utilities/facilities consist of electrical distribution and service facilities, telephone communication lines, irrigation facilities, roadways, water delivery facilities and natural gas pipelines. A summary of their assessment of compensability, referencing the data set forth in the Relocation Inventory Table, is as follows:

The following utilities/facilities appear to be non-compensable relocations:

Sacramento River South Reach Item's – 4-8, 10, 12, 14, 15 Sacramento River North Reach – Item 5 (Pipeline), Yolo Bypass Item 2 (water pipe), (DWSC East Reach - Item's 1-7 gas lines and pipelines) (Sacramento River South Reach - Item's – 1, pipeline 3, gas pipe 9, telephone cable 11, water pipe 13, burial phone cable) (Sacramento River North Reach - Item's 1, outfall structure and pipe 3, high pressure gas line 4, septic tank and piping 6-30, pipe lines, storm drains, telephone conduits, water treatment facility, high pressure gas mains, gas tank, water line, water well, electrical conduit, irrigation and portable water main, 20 ft pipe towers, steel pipeline, navigation light, 32-37 Fiber optic cable, waste outfall line, water main, pipeline, gas line, sewage pipeline) (Yolo Bypass Reach Item 1 - Power line across the levee)(DWSC West Reach Item's 1-9 fish passage facility, 4 gas lines, 3 pipelines, outfall structure RD 900).

The following utilities/facilities appear to be compensable relocations:

(Item 8 - DWSC East – 8 power Poles) (Item's 2-4 Port North - sewer lines and utility corridor under barge canal)(Item 1 - Sacramento River South Setback Reach - 143 power poles , Items 2,3,11 – Roads, Item 9 – Cellular Tower and facilities, Item 4,14 Storm drains, Item 13, 5 Gas Main and Gas line, Item 6 – 120' Sewer main, Item 10 – Pump Station #5, (Item's 38, 39 Sacramento River North Reach Items - 37 power poles, 24 light poles) (Item 3 - Yolo Bypass - 2 power poles) (Item's 1-2 -South Cross Levee – Jefferson Road relocations, 10 power poles, ditch, fence, 3 covered structures) (Item 10 - DWSC West - 1 power pole), (Yolo Bypass – road relocations)(Sacramento North reach – road relocations)

The following utilities/facilities may or may not be compensable. There is insufficient information at this time to make a preliminary assessment as to whether the utilities/facilities are compensable relocations. The submission of additional data and further analysis is required:

(Item 9-gas pipelines various owners) (Item 2 Sacramento River North Reach - pipeline cut and replace RD 537) ( Item 31- Citizens Utility Co. RD 900 - Pipeline-protect in place (Items 21, 18, Sac

River South Setback Reach – abandon underground electrical and telephone lines)(Item 14 - Sac River South Setback Reach –drainage swales PIP outside construction footprint)(Item 7- Communications Towers and Supporting Facilities PIP)(Deep Water Ship Channel East – ditch removed and rebuilt Station 102 to 125)

TABLE 8 - Code of Accounts 02 Utility/Facility for the Recommended Plan

Reach	Cost
Sacramento River North Levee	\$25,110,000
Sacramento River South Setback Levee	\$28,092,00
Yolo Training Dike	N/A
Yolo Bypass (North and South)	\$205,000
South Cross Levee	\$1,098,000
Stone Lock	\$100,00
Deep Water Ship Channel East	\$7,893,000
Deep Water Ship Channel West	\$1,522,000
Sub Total Rounded	\$64,020,000
Contingency (28%)	\$17,926,000
<b>*Total</b>	(Rounded) \$81,946,000

\*Note: Construction Management Costs and PED costs for all construction items are displayed in the MII Cost Engineering Appendix. The Utility Facility Inventory table, maps and costs discussed herein are available in Exhibit D.

**ANY CONCLUSION OR CATEGORIZATION CONTAINED IN THIS REAL ESTATE PLAN (AND THE REPORT) THAT AN ITEM IS A UTILITY OR FACILITY RELOCATION TO BE PERFORMED BY THE NON-FEDERAL SPONSOR AS PART OF ITS LERRD RESPONSIBILITIES AND/OR IS OTHERWISE COMPENSABLE OR NON-COMPENSABLE IS PRELIMINARY AND FOR DISCUSSION PURPOSES ONLY. THE GOVERNMENT WILL MAKE A FINAL DETERMINATION OF THE RELOCATIONS NECESSARY FOR THE CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE PROJECT AFTER FURTHER ANALYSIS AND COMPLETION AND APPROVAL OF THE FINAL ATTORNEY'S OPINIONS OF COMPENSABILITY FOR EACH OF THE IMPACTED UTILITIES AND FACILITIES DURING FINAL DESIGNS.**

## **19. Hazardous, Toxic, and Radiological Waste Impacts**

A Phase 1 Environmental Site Assessment (ESA) was completed in May 2012 for approximately 50.5 miles of levee system that surround the City of West Sacramento and the Deep-Water Ship Channel to identify recognized environmental conditions involving hazardous, toxic, or radioactive waste (HTRW). Sites that could affect levee construction projects may include those that exhibit the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or the material threat of a release into structures, the ground, and groundwater or surface waters of the project site.

Environmental Data Resources (EDR) conducted a records search of 71 federal, state, public, and proprietary available databases to identify sites located within a one mile radius of the project area where the presence or likely presence of HTRW has been previously documented. The Phase 1 ESA conducted in May 2012 did not include any sampling or analysis of environmental media. A review of the records search results identified 788 environmental sites including eight sites that have the HTRW concerns with the potential to affect future construction activities and eight sites with HTRW concerns that are not likely to affect future construction activities.

For the West Sacramento GRR, the USACE conducted a second review of previously identified potential HTRW sites in the May 2012 Phase 1 ESA. The USACE utilized updated site information in the EnviroStor and GeoTracker databases maintained by the California Department of Toxic Substance Control (DTSC) and California State Water Resources Control Board (SWRCB) to determine possible impacts that the identified sites may have on future construction activities. Characteristics used to determine potential impacts on construction activities included the suspected mass and volume of contaminants, their mobility within the soil-groundwater-air matrix, and the likelihood of traditional levee remediation measures impacting contaminated media.

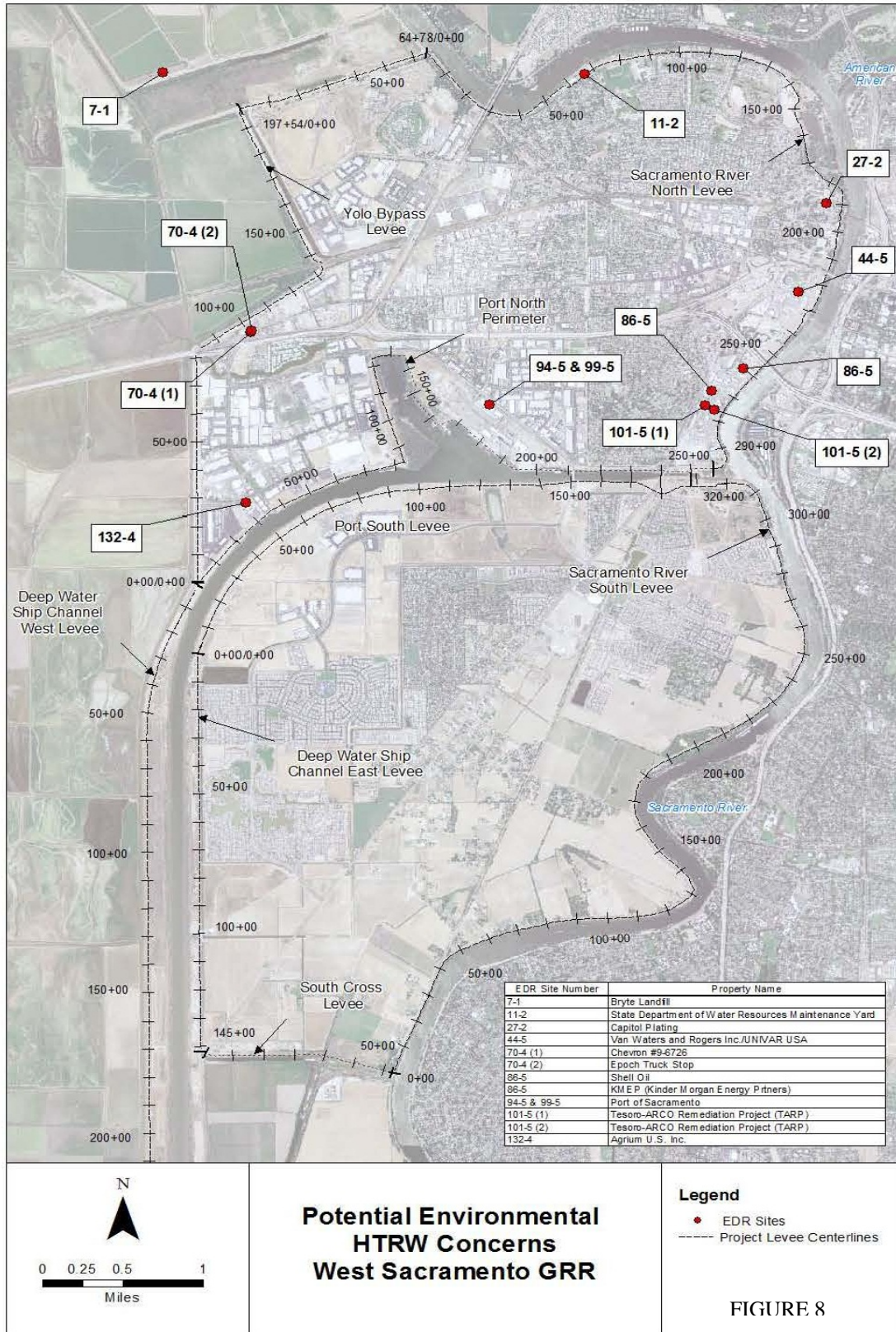
If any evidence of potential HTRW is found during construction, all work would cease, and the USACE and non-Federal sponsor would be notified for further evaluation of the potential contamination. Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations. The USACE would require that a contingency plan that outlines steps to be taken before and during construction activities to document soil conditions, as well as procedures to be followed if unexpected conditions are encountered, be prepared by the contractor.

The non-Federal sponsor is responsible for 100 percent of the cost to develop the clean-up procedures (remedial action plan) and to treat the contaminate in place or relocate the material (ER 1110-2-1150).

TABLE 9

<b>Type 1 Sites – HTRW concerns that may impact future activities</b>						
<b>Site Name</b>	<b>EDR ID #</b>	<b>Distance from Centerline (miles)</b>	<b>Closest Levee Reach</b>	<b>Stationing Along Closest Reach</b>	<b>Address</b>	<b>Summary</b>
State Department of Water Resources Maintenance Yard	11-2	0.00	Sacramento River North Levee	50+00	1450 Riverbank Rd., West Sacramento, CA 95605	Leaky underground storage tank with hydrocarbon plume located under the levee
Capitol Plating	27-2	0.13	Sacramento River North Levee	180+00	319 3 <sup>rd</sup> St., West Sacramento, CA 95605	Heavy metals and chlorinated solvents in the soil around the former facility
Van Waters and Rogers Inc./UNIVAR USA	44-5	0.00	Sacramento River North Levee	220+00	800-850 South River Rd., West Sacramento, CA 95691	Former chemical handling and storage facility with solvent contamination in soil and groundwater
Chevron #9-6726 and Epoch Truck Stop	70-4	0.13	Yolo Bypass	100+00	4790-4800 West Capitol Ave, West Sacramento, CA 95691	Co-mingled fuel plume located beneath to fuel dispensers
Shell Oil, Ramos Environmental, KMEP	86-5	0.13	Sacramento River North Levee	260+00	1509-1570 South River Road, West Sacramento, CA 95691	Previous storage, distribution, and recycling facilities for hydrocarbon compounds. Current soil and groundwater contamination
Port of Sacramento	94-5 & 99-5	0.25	Port North Area	160+00	2895 Industrial Blvd., West Sacramento, CA 95691	Ammonia and Nitrate plume associated with previous fertilizer storage and transport
Tesoro-ARCO Remediation Project (TARP)	101-5	0.13	Sacramento River North Levee	270+00	1700-1701 South River Road, West Sacramento, CA 95691	Large fuel storage and distribution terminal with associated hydrocarbon and VOC plume
Agrium U.S. Inc.	132-4	0.13	Port North Area	35+00	3961 Channel Drive, West Sacramento, CA 95691	Nitrogen contamination of groundwater related to previous storage and production of fertilizers

## Type 1 Potential Environmental Concerns



**20. Attitude of Landowners**

To date, the results of the outreach program from the public scoping meetings have been very favorable, constructive, and supportive. The tone and substance of the input has been consistent with the voter-approved assessment to fund the local share of the project. The attitude of landowners that have the potential to be temporarily relocated along the South Cross Levee area during construction of the setback levee varied on a case by case basis. Some residents felt public safety issues were important and could see value in relocating and were supportive. Some residents were angry and did not want to relocate. The attitude of landowners along the Sacramento River North Levee reach and the South Cross Levee reach is unknown.

**21. Cultural Resource Issues**

Preparation and implementation of a Programmatic Agreement, Historic Properties Management Plan, and Historic Properties Treatment Plans has been included in the EIS Cultural Resource Appendix C. Coordination continues with Yocha Dehe Wintun Nation.

EXHIBIT A

ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION  
CAPABILITY  
WEST SACRAMENTO GENERAL REEVALUATION STUDY

SPONSORS: The State of California, Central Valley Flood Protection Board (CVFPB), West Sacramento Flood Control Agency (WSFCA)

I. Legal Authority:

- a. Do the sponsors have legal authority to acquire and hold title to real property for project purposes? Yes CVFPB; Yes WSAFCA
- b. Do the sponsors have the power of eminent domain for this project? Yes CVFPB; Yes WSAFCA
- c. Do the sponsors have "quick-take" authority for this project? Yes CVFPB; Yes WSAFCA
- d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary? No CVFPB; No WSAFCA
- e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn? No CVFPB; No WSAFCA

II. Human Resource Requirements:

- a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including P.L. 91-646, as amended? Yes CVFPB; Yes WSAFCA
- b. If the answer to a. is "yes," has a reasonable plan been developed to provide such training? Yes CVFPB; WSAFCA: Yes
- c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project? Yes CVFPB; Yes WSAFCA
- d. Is the sponsor's project in-house staffing level sufficient considering its other workload, if any, and the project schedule? Yes CVFPB; Yes WSAFCA
- e. Can the sponsor obtain contractor support, if required, in a timely fashion? Yes CVFPB; Yes WSAFCA
- f. Will the sponsor likely request USACE assistance in acquiring real estate? No CVFPB; No WSAFCA

III. Other Project Variables:

- a. Will the sponsor's staff be located within reasonable proximity to the project site? Yes

CVFPB; Yes WSAFCA

b. Has the sponsor approved the project real estate schedule/milestones? Yes CVFPB; WSAFCA  
Response: No, the approval occurs during the preconstruction, engineering and design phase.

IV. Overall Assessment:

a. Has the sponsor performed satisfactorily on other USACE projects? Yes CVFPB; WSAFCA

b. With regard to this project, the sponsor is anticipated to be: The State of California, Central Valley Flood Protection Board and the West Sacramento Flood Control Agency

V. Coordination:

a. Has this assessment been coordinated with the sponsor? Yes CVFPB; Yes WSAFCA

b. Does the sponsor concur with this assessment? Yes CVFPB; Yes WSAFCA

Prepared by:

*Laurie Parker*

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Laurie Parker  
Realty Specialist  
Acquisition Branch

Date 12/02/2015

Reviewed and Approved by:

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Diane Simpson  
Chief, Real Estate Division  
U.S. Army Engineer District, Sacramento

Date \_\_\_\_\_

EXHIBIT B - POLICY GUIDANCE LETTER 31- REAL ESTATE SUPPORT TO  
PLANNING PARADIGM (3x3x3)

DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS  
441 G STREET NW  
WASHINGTON, D.C. 20314-1000

REPLY TO  
ATTENTION OF:

CEMP-CR

JAN 10 2013

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Real Estate Policy Guidance Letter No. 31-Real Estate Support to Civil Works  
Planning Paradigm (3x3x3)

1. References.

- a. Memorandum, CECW-CP, 8 February 2012, Subject: U.S. Army Corps of Engineers Civil Works Feasibility Study Program Execution and Delivery
- b. ER 5-1-11, USACE Business Process, 1 November 2006
- c. EC 405-1-04, Appraisal, 30 Dec 2003
- d. ER 1105-2-100, Planning Guidance Notebook, 22 Apr 2000
- e. ER 405-1-12, Chapter 12, Real Estate Roles and Responsibilities for Civil Works, Cost Shared and Full Federal Projects, Change 31, 1 May 1998

2. Purpose. In accordance with reference a, this memorandum provides interim policy and guidance for real estate efforts associated with feasibility studies under the new Planning Paradigm, "SMART Planning," and the 3x3x3 rule. In accordance with the 3x3x3 rule, all feasibility studies should be completed within three years, at a cost of no more than \$3 million, utilize three levels of vertical team coordination, and be of a "reasonable" report size.

3. Background. Real Estate has been fully engaged in the implementation of the 3x3x3 by actively participating in each webinar, the planning modernization workshop, and serving as part of the HQ Transition Team. In accordance with references b-e, Real Estate involvement is essential to the development and implementation of any pre-authorization project. Paragraph 12-16 of reference e. outlines the significant topics that must be covered in a real estate plan (REP). The level of detail necessary to apply the requirements of real estate policy and guidance will vary depending on the scope and complexity of each project.

As outlined in Chapter 12, the minimum interests in real property necessary to support various types of projects must be identified. As projects are scoped at the beginning of the feasibility phase (via a Charette or other forum), it is essential that Real Estate become familiar with the project authority and purposes to make a determination of the minimum interests and estate(s), both standard and non-standard, necessary as projects are scoped and alternatives evaluated. If a

## CEMP-CR

SUBJECT: Real Estate Policy Guidance Letter No. 31-Real Estate Support to Civil Works Planning Paradigm (3x3x3)

non-standard estate will be needed, this should be discussed with MSC and HQ Real Estate as early as possible to ensure that the justification is sound and will serve the project purpose.

4. Policy. Typically, the attorney's preliminary opinion of compensability and gross appraisals are two areas that require more detail than may be readily available during the start of the feasibility phase, and are critical to determination of accurate estimates for real estate and total project costs. Due to the focus on 3 years or less for study duration, it will be essential for Real Estate to be adaptable and scale its requirements, decision making, and risk management in proportion to the significance of total project costs.

a. Gross Appraisals:

Specific to gross appraisals, EC 405-1-04 provides that cost estimates are utilized for preliminary planning of projects and in other cases, brief gross appraisals are acceptable. For purposes of the feasibility phase, the detail will vary as outlined below.

- (1) For projects in which the value of real estate (lands, improvements, and severance damages) are not expected to exceed ten percent of total project costs (total cost to implement project), a cost estimate (or rough order of magnitude) will be acceptable for purposes of the feasibility phase.
- (2) For projects in which the value of real estate (lands, improvements, and severance damages) do not exceed 30 percent of total project costs (total cost to implement project), a brief gross appraisal will be acceptable for purposes of the feasibility phase. A brief gross appraisal will follow format issued by Chief Appraiser.
- (3) For projects in which the value of real estate (lands, improvements, and severance damages) exceed 30 percent of total project costs (total cost to implement project), a full gross appraisal will be prepared in accordance with the appraisal regulation and guidance provided by EC 405-1-04 and the Chief Appraiser.

b. Attorney's Opinion of Compensability:

As described in paragraph 12-17 of Chapter 12, utility/facility relocations may require preliminary attorney's opinions of compensability. While the practice of obtaining preliminary attorney's opinions of compensability provides a high degree of certainty with regard to project costs during the feasibility phase, such opinions can be time consuming and may provide more certainty than may be optimal for feasibility purposes when potential utility/facility relocation costs do not constitute a large percentage of total project costs. In support of the goals set out in the new planning paradigm described in reference a., Districts shall adhere to the following guidance:

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SUBJECT: Real Estate Policy Guidance Letter No. 31-Real Estate Support to Civil Works Planning Paradigm (3x3x3)

(1) Where the estimated total cost to modify all project utility facility relocations, including the value of any additional lands that may be required to perform the relocations does not exceed 30 percent of estimated total project costs, the District Office of Real Estate shall, in lieu of an attorney's opinion of compensability prepare a real estate assessment. Such a real estate assessment, will address the following questions:

- (a) Is the identified utility facility generally of the type eligible for compensation under the substitute facilities doctrine (e.g., school, highway, bridge, water and sewer systems, parks, etc.)
- (b) Does the District have some valid data or evidence that demonstrates that it has identified an owner with a compensable interest in the property

If the answer to both questions is yes, then the District Office of Real Estate shall reflect the cost of providing a substitute facility in the Real Estate Plan (REP) and all other feasibility study cost estimates. If the answer to either or both questions is no, the District shall not reflect the cost of a substitute facility in the REP or other feasibility study cost estimates. However, the REP narrative should still include a discussion on the facility with results of analysis and project impact. For cost shared projects, the non-federal sponsor must be advised that the inclusion of substitute facilities costs in the REP or other use feasibility study estimates is for planning and budgeting purposes only and does not constitute a preliminary or final determination of compensability by the agency regardless of whether the cost of substitute facilities are reflected in the feasibility study documents. Using a real estate assessment does not eliminate the need to obtain a final attorney's opinion of compensability prior to execution of the PPA.

(2) Where the estimated total cost to modify all project facility relocations, including the value of any additional lands that may be required to perform the relocations, has public or political significance or the costs exceed 30 percent of estimated total project costs, a preliminary opinion of compensability shall be prepared for each owner's facilities. The level of documentation for each relocation item should be based on the significance of the relocation item to project formulation and estimated project costs.

Real Estate products, such as the REP, must be adaptable and scaled based on the project scope. Additionally, Real Estate must utilize the risk register to highlight areas where cost, schedule or uncertainty is greater in order to manage risk. Going forward, the Real Estate Division will continue to work closely with the Planning and Policy Division, Engineering and Construction Division, the Programs Integration Division and the National Law Firm on the Planning SmartGuide. This SmartGuide will provide more on procedures, tips, techniques and tools for

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SUBJECT: Real Estate Policy Guidance Letter No. 31-Real Estate Support to Civil Works Planning Paradigm (3x3x3)

specific types of planning projects to aid in implementation of the new Planning Paradigm. All bulletins and updates on the SmartGuide can be found at:

<http://planning.usace.army.mil/toolbox/>.

5. Duration. The policies stated herein will remain in effect until amended or rescinded by Policy Memorandums, Policy Guidance Letters, Engineers Circulars or Engineer Regulations.

FOR THE COMMANDER:

  
SCOTT L. WHITEFORD  
DIRECTOR OF REAL ESTATE

DISTRIBUTION:

COMMANDER,  
GREAT LAKES AND OHIO RIVER DIVISION (CELRD-PDS-R)  
MISSISSIPPI VALLEY DIVISION (CEMVD-TD-R)  
NORTH ATLANTIC DIVISION (CENAD-PD-E)  
NORTHWESTERN DIVISION (CENWD-PDS)  
PACIFIC OCEAN DIVISION (CEPOD-RE)  
SOUTH ATLANTIC DIVISION (CESAD-PDS-R)  
SOUTH PACIFIC DIVISION (CESPD-ET-R)  
SOUTHWESTERN DIVISION (CESWD-ET-R)

CF:

COMMANDER,  
DETROIT DISTRICT (CELRE-RE)  
HUNTINGTON DISTRICT (CELRH-RE)  
LOUISVILLE DISTRICT (CELRL-RE)  
NASHVILLE DISTRICT (CELRN-RE)  
PITTSBURGH DISTRICT (CELRP-RE)  
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NEW ENGLAND DISTRICT (CENAE-RE)  
NEW YORK DISTRICT (CENAN-RE)  
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